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DEBATE

How can health promotion interventions be adapted for minority ethnic communities? Five principles for guiding the development of behavioural interventions

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SUMMARY

The term 'culturally sensitive' is often used to describe interventions adapted for minority ethnic communities. However, understanding of strategies for adapting behavioural interventions for such communities is limited. The questions addressed in this paper are: What are the main strategies for adapting interventions to reduce coronary heart disease (CHD) for minority ethnic communities? Why have interventions been adapted in these ways? A systematic review was carried out to investigate interventions for preventing CHD, including promoting physical activity, smoking cessation and healthier diets in Pakistani, Chinese and Indian communities in countries where these groups are minorities. International databases and key websites were searched, and 23 477 titles and abstracts were initially identified. Seventeen papers met inclusion and quality criteria. A 'meta-ethnographic' approach to data synthesis was employed to identify underlying principles for

adapting interventions. The rationale underpinning adaptations is not made explicit in individual studies, limiting generalizability. Five principles for adapting behavioural interventions for minority ethnic communities were identified: (i) use community resources to publicize the intervention and increase accessibility; (ii) identify and address barriers to access and participation; (iii) develop communication strategies which are sensitive to language use and information requirements; (iv) work with cultural or religious values that either promote or hinder behavioural change; and (v) accommodate varying degrees of cultural identification. While the principles require further testing and verification, they have been generated through a systematic approach to study identification, quality appraisal and data synthesis. This represents significant progress in advancing understanding of adapted behavioural interventions for minority ethnic communities.

Key words: minority ethnic communities; physical activity; smoking cessation; diet

INTRODUCTION

Race equality legislation and policies and increasing globalization combine to highlight the importance of including minority ethnic communities in efforts to promote healthier lifestyles and prevent disease (Scottish Executive, 2003, 2005).

The term 'culturally sensitive' has been widely employed to describe initiatives which have been tailored to increase their appropriateness for minority ethnic communities. However, understanding of the factors which need to be considered in developing adapted interventions is still developing, within a wider context of competing

theory-based strategies for changing health behaviour (Aboud, 2009).

Bhopal (2006) argues that pending the development of an evidence base for minority ethnic health initiatives, it is important to adapt existing interventions. There is some consensus that it is important to address deep-rooted influences on health behaviour in 'at-risk' groups, including cultural influences and structural factors, such as disadvantaged socio-economic status (McAllister and Farquhar, 1992; Pasick *et al.*, 1996; Greenhalgh *et al.*, 1998; Resnicow *et al.*, 1999). Resnicow *et al.* (1999) have distinguished between interventions adapted at 'surface structure' and those adapted at 'deep structure'. The former match interventions to observable characteristics, such as people and language, while the latter interventions engage with cultural, social, environmental and psychological forces that influence health behaviour. Resnicow *et al.* (1999) argue that while the former will increase the 'receptivity' of health-related messages, it is only the latter which will impact on behavioural change.

However, fundamental questions remain unanswered: How are interventions commonly tailored for minority ethnic communities, and why are they adapted in these ways? What are the factors which should be considered? A rigorous approach towards identifying the nature of adaptations to targeted interventions—including 'surface' and 'deep' structure adaptations—will increase the understanding of the scope for tailoring interventions and what can be achieved by doing so. This is reflected in the scope of this paper.

A health care needs assessment study of minority ethnic groups in the UK established that although groups with their origins in Africa, the Indian sub-continent and China are heterogeneous in their health needs, attention should be concentrated on the main causes of mortality, including coronary heart disease (CHD) (Gill *et al.*, 2008). Indeed, mortality data, by country of birth and incidence and prevalence data, support an excess of CHD for Bangladeshi, Indian and Pakistani groups in the UK (referred to as UK South Asians) (Bhopal, 2000). In the USA, the proportion of premature heart disease deaths is higher among Asians/Pacific Islanders (including Chinese communities) than among whites (Center for Disease Control and Prevention, 2004). Thus, addressing modifiable risk factors which will reduce

mortality and morbidity due to CHD, including physical activity, smoking cessation and diet, is crucial.

This paper builds on a systematic review which evaluated interventions related to reducing the main causes of mortality, including CHD, for Pakistanis, Chinese and Indians (Netto *et al.*, 2008). The communities chosen were the largest minority ethnic communities in Scotland, where the study was funded. Full details of the report are available at <<http://www.library.nhs.uk/ETHNICITY/ViewResource.aspx?resID=317172&tabID=289>>. This paper synthesizes the nature of adaptations in targeted interventions for minority ethnic communities, considers the underlying rationale for the adaptations and offers five principles to inform the planning of future interventions for such communities.

METHODS

Searching of studies

Figure 1 illustrates stages leading to the identification of studies. A systematic search for all dates and English articles only was undertaken by A.J. from 16 February 2007 to August 2007 including MEDLINE, EMBASE, Web of Knowledge, CINAHL and PsycINFO. Key websites were also searched: Specialist Library on Ethnicity and Health, Health Development Agency, Cochrane Library, Campbell Collaboration, the UK NHS Centre for Reviews & Dissemination and the National Institute for Clinical Excellence. Attesting to the rigour of the methods, the dietary intervention studies were consistent with White *et al.*'s (1998) wider review on this topic. The search encompassed terms referring to ethnic group, country, CHD, physical activity, smoking cessation and diet. Studies in the review were evaluations of health promotion interventions which targeted Pakistanis, Chinese and Indian communities, in countries where they were a minority, that is, Europe, USA, Australia and South Africa. We excluded studies which: (i) only described the developmental stages of an intervention; (ii) focused on prevalence data, knowledge, attitudes and behaviours relating to the main disease conditions/risk factors; (iii) related to diabetes and secondary prevention; and (iv) aimed to change organizational practices in working with minority ethnic communities.

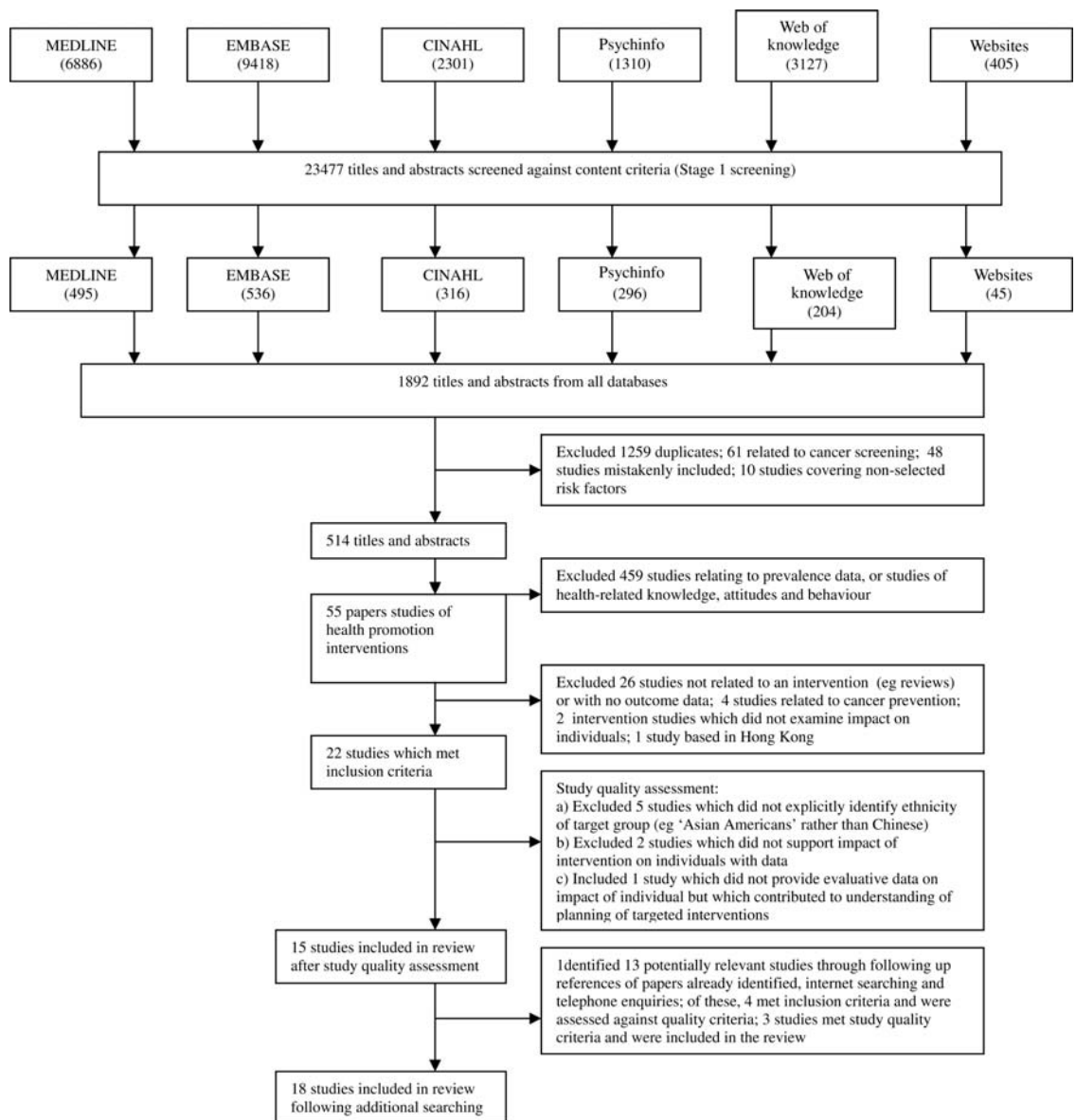


Fig. 1: Identification of studies.

Further search was undertaken by publicizing the study through an electronic network on ethnicity and health (minority-ethnic-health@jiscmail.ac.uk), follow-up search of references, internet searching and telephone enquiries.

Screening

To reduce researcher bias, A.J. and G.N. independently screened a sample of 23 477 titles and

abstracts, compared the outcome of this process and discussed issues relating to the interpretation of the inclusion criteria with R.B., where there was a disagreement. A sample of titles and abstracts were again screened by A.J. and G.N., and a high level of agreement was reached, reducing the possibility of selection bias in remaining screening by A.J. Fifty-five papers on health promotion were identified, and entire papers were read by at least two

co-authors, J.K., N.L. and G.N., to assess whether studies met inclusion criteria.

Study quality assessment

Quality assessment of qualitative research is a developing field, with arguments including whether there is a plausible philosophical rationale for carrying out such assessment and if so, what the criteria should be (Campbell *et al.*, 2003). Quality appraisal in reviews of both qualitative and quantitative studies poses even more challenges (Mays *et al.*, 2005). Mays *et al.* (2005) identify two approaches to study quality: quantitative criteria, which allow for a cut-off point to be calculated and for studies falling below this point to be excluded, and qualitative criteria without scores. As the early developmental stage of the field and the diversity of study and intervention designs became clear to us, our goal of identifying the nature of adaptations for minority ethnic communities led us to specify three quality criteria: (i) identification of ethnic groups to ensure relevance to the study; (ii) comparison of baseline and outcome data supporting intervention effectiveness; and (iii) contribution to increased understanding of approaches used to adapt interventions for target communities.

Data extraction

Data extraction forms used by White *et al.* (1998) were customized, piloted and revised. Study details were then filled in by N.L. and J.K. and reasons for inclusion and exclusion noted. G.N. checked all the data extraction forms against the identified papers.

Data synthesis: principles for effective behavioural interventions

We used Noblit and Hare's (1988) meta-ethnographic approach to synthesize the qualitative and quantitative studies in the review. Although this method was initially proposed to synthesize qualitative research, we agree with Mays *et al.* (2005) that there is nothing in principle to prevent its use for the synthesis of qualitative and quantitative studies. The meta-ethnographic approach is defined as a form of systematic comparison which involves the 'translation' of same-language studies into one another, followed by the synthesis of the

'translations'. The translations are not literal but 'idiomatic translations of accounts into one another' in an 'interpretive synthesis' [(Noblit and Hare, 1988), p. 31] which is built on understanding the relationship between the studies.

The meta-ethnographic approach consists of seven phases. The first three phases overlap with the stages of systematic review: identifying an initial area of interest; deciding what is relevant; and reading and analysing studies. In Phase 4, the relationship between studies is analysed by identifying key concepts in each study or 'first-order interpretations' (Noblit and Hare 1988). In Phase 5, studies are 'translated' into one another, by comparing the concepts and their interactions in one account with those of another account. In Phase 6, some translations are synthesized by determining whether some types of translations can encompass other translations. These constitute 'second-order generalizations'. Finally, in Phase 7, the synthesis is expressed as 'third-order generalizations' by rendering them into an appropriate medium for the target audience.

The process of screening, appraising study quality and data extraction discussed earlier are similar to the first three phases. As part of Phase 4, J.K., N.L. and G.N. identified measures taken to adapt interventions for target communities and noted recurrent modifications ('first-order interpretations'). These themes formed the basis for a systematic process of comparing and 'translating studies into one another', showing how a form of modification in one paper was extended in other papers. This led to 'second-order interpretations' which were converted by G.N. into generalizable principles for guiding the planning of future targeted interventions.

RESULTS

We judged 17 behavioural interventions to be relevant. The majority of the interventions had been effective in bringing about behavioural changes, with others affecting changes in either health-related attitudes or health status.

Brief description of studies and interventions identified

With the exception of one intervention, based in Norway (Jenum *et al.*, 2006), the interventions

were carried out either in the UK or USA. All the UK-based interventions targeted the South Asian population (ethnic groups with origins in Pakistan, India or Bangladesh), while all the US-based interventions targeted Chinese-Americans. Sample sizes varied from 13 (Williams and Sultan, 1999) to 2950 (Jenum et al., 2006). Varied interventions were identified, including organized group activity, individual advice sessions and media campaigns. Only eight of the interventions reported an underpinning theoretical framework.

Recurrent themes and adaptations or 'first-order generalizations' are summarized in the first column of Table 1. A significant insight in determining the relationship between studies was that the implicit basis for adapting interventions was recognition of distinctive features of the target community that needed to be addressed. This included their minority status, the disadvantaged nature of some communities, their linguistic diversity and differential access to information, cultural or religious values and heterogeneity. Taking account of each of these dimensions required specific forms of modifications to be made to the interventions. These are presented as 'second-order translations', summarized in the second column of Table 1. Finally, five generalizable principles or 'third-order interpretations' are offered in the third column of Table 1. Each principle addresses one or more features of the target communities. Since no one study identified all these aspects of the target communities or adapted interventions on the basis of all these dimensions, we believe our synthesis has achieved a conceptual development beyond that attained in the individual studies.

Principle 1: use community resources to increase intervention accessibility

Several studies drew on community resources to publicize the intervention and increase its accessibility, using ethnic-specific media and networks, local community leaders and community events (Snowdon, 1999; Williams and Sultan, 1999; Jenum et al., 2006). 'Reciprocal translation' of the concepts from one study into other similar studies (Noblit and Hare, 1988) led to the insight that these adaptations were addressing the minority status of the communities. This led us to propose the principle of

using community resources to increase intervention accessibility.

Principle 2: identify and address barriers to access and participation in interventions

Several studies reported measures to increase participants' access to intervention activities, for example, by providing transport (Mathews et al., 2007) or keeping costs of participation low (Lew et al., 1999). These measures took account of the disadvantaged socio-economic position of many target groups. Adaptations designed to overcome barriers related to the gendered nature of caring responsibilities within South Asian communities, for example, through crèche provision, were also identified (Carroll et al., 2002). In Taylor-Piliae et al.'s (2006) study, Tai Chi was chosen for older Chinese adults, since this exercise allowed even those with chronic illness to participate. These studies illustrate the need to adapt interventions to take account of gender and disability as well as ethnicity.

Translating the concept of addressing barriers to access into other studies led us to identify measures taken to address barriers to behavioural change. For instance, both Ma et al.'s (2004a) US-based study and Netto et al.'s (2007) UK-based study found that participants experienced considerable stress associated with belonging to a minority group, which hindered their participation in the interventions. In order to overcome this barrier, stress reduction exercises were designed. To encompass these adaptations, we extended the principle from identifying and addressing barriers to access to include identifying and addressing barriers to participation.

Principle 3: develop communication strategies which address language use and differential information requirements

Many studies employed conventional means of overcoming language barriers, for example, through bilingual facilitators. Less commonly, Taylor-Piliae et al. (2006) chose Tai Chi to overcome language barriers among the multilingual Chinese sample. Other studies considered participants' ability to speak but not read their native language (Ma et al., 2004c) and varying levels of literacy (Netto et al., 2007). This led us to identify the strategy of not only overcoming language barriers but exercising sensitivity to

Table 1: Data synthesis: concepts, second- and third-order interpretations

Concepts/themes derived from primary studies	Second-order interpretations	Third-order interpretations
Many interventions used community resources to increase accessibility to the target groups, including community leaders, networks, ethnic-specific media and events	The minority status of the target groups required the use of targeted measures to increase accessibility to the intervention	Use community resources to increase accessibility to the intervention
Many interventions addressed financial barriers to access; others addressed barriers to access and participation related to gender and age; yet others took account of socio-economic disadvantage experienced by the target population, such as low educational levels and long working hours	Interventions need to address disadvantaged socio-economic position and other aspects of identity, in addition to ethnicity, including gender and age	Identify and address barriers to access and participation
Many interventions used bilingual facilitators and translated printed material in diverse languages to promote the intervention; other interventions took account of varying levels of literacy among participants; enabled participants to use their native languages to express health-related concerns and took account of different sources of health-related information among diverse language groups	Targeted interventions need to develop communication strategies which address language barriers, literacy levels and differential access to health-related information within the target group. Such strategies should also allow individuals to freely communicate with health professionals	Develop communication strategies which address language use and differential access to information
Some effective interventions used cultural and religious values to encourage participants to make behavioural changes; others incorporated traditional food and physical activities; where cultural and religious beliefs which were not consistent with CHD prevention were identified, action was recommended to counter such influences	Some interventions incorporated cultural and religious values which were consistent with health promotion messages to motivate participants to make behavioural changes. Cultural or religious beliefs which are not compatible with health promotion messages need to be countered	Identify and work with cultural or religious values which motivate or hinder behavioural change
Varying degrees of cultural or ethnic identification within the target community were identified in the planning and evaluation of a small number of interventions	Interventions need to accommodate varying degrees of ethnic identification within the target community in the planning and evaluation of interventions	Exercise sensitivity to varying degrees of ethnic/cultural identification in the planning and evaluation of interventions

language use. This was reinforced by Ma *et al.*'s (2004b) study which emphasized the use of native languages to enable participants to discuss concerns with health professionals. We translated the concept of the participant as an active agent in the communication of health promotion messages into Taket *et al.*'s (2003) study which recommends the incorporation of the sources of information recalled by different language groups. This resulted in the insight that target groups may have differential access to information, leading us to propose the principle of exercising sensitivity to language use and differential information requirements.

Principle 4: identify and work with cultural or religious values that either motivate or inhibit behavioural change

Studies that reported supporting participants in making attitudinal or behavioural changes by highlighting the compatibility of health promotion messages with their beliefs (Ma *et al.*, 2004a, c) led us to identify the concept of working with participants' cultural values to motivate behavioural change. For instance, Ma *et al.* (2004a) used the value attached to persistence among Chinese-American participants to encourage them to persist in their quit attempts. Translating this concept into studies of smoking cessation interventions which targeted Muslim communities during Ramadan when receptivity to religious messages was perceived to be high (Taket *et al.*, 2003; Ali *et al.*, 2006) resulted in the concept being broadened to include working with participants' religious values. Such work highlighted the relationship between abstaining from smoking and participants' religious beliefs.

Attempts to translate the principle into Netto *et al.*'s (Netto *et al.*, 2007) study identified the need for it to be broadened further to take into account cultural values which *hindered* the adoption of healthier lifestyles. For example, fatalistic views among certain individuals in the UK-based South Asian population discouraged them from taking preventative action against CHD. In order to encompass this strand of work, we broadened the principle to identifying and working with cultural and religious values which either *encourage* or *inhibit* healthier lifestyles.

Our efforts to translate this principle into other studies highlight that identifying cultural

influences that are likely to impact on participants' health-related behaviour may be problematic. For example, in comparing two walking programmes for older Chinese-Americans, one which was 'culturally modified' and one which was not, Chiang (Chiang, 2005) found that both had significant impacts. One of the explanations offered was that other elements of Chinese culture might need to be incorporated in developing walking programmes.

Principle 5: accommodate degrees of cultural affiliation in the planning and evaluation of targeted interventions

Ma *et al.* (2004a) was the only study to explicitly identify the need to take account of varying degrees of cultural identification and acculturation among the target population. However, two studies used the concept to explain the partial effectiveness of the intervention. Sun *et al.* (1999) suggested that Chinese-American youth who held both traditional Chinese and mainstream American values need longer exposure to positive health measures than that allowed. Similarly, one explanation Chiang (2005) offered for the significant impacts of both walking programmes for Chinese-American participants discussed above was their acculturation with the majority population. These studies led us to propose the principle of accommodating cultural identification in the planning and evaluation of interventions.

DISCUSSION

Our systematic review has contributed to the field of targeted interventions for minority ethnic communities in five ways. Firstly, we have found that adapted behavioural interventions for preventing CHD among the communities concerned are rare in Europe and North America. This indicates that many individuals in these communities may not be taking preventative action, and that urgent action is needed. Secondly, we found that South Asian communities were the major focus of research in the UK and Chinese communities in the USA. Thirdly, the review has synthesized a transatlantic corpus of work, the significance of which is revealed in the absence of references to work in other countries in the studies. Despite differences in patterns of migration, settlement and

healthcare systems in both continents, many commonalities underpinning adapted interventions have been identified, adding credibility to the strategies employed. Fourthly, the review reveals considerable scope for adapting interventions to increase their appropriateness for the target communities by considering the multiple dimensions of individuals' lived experiences. These include their minority status, socially disadvantaged position, cultural and religious beliefs and cultural affiliation. Finally, we offer five principles to guide the planning and delivery of future targeted interventions for minority ethnic communities.

Our theoretical contribution to the field of targeted interventions lies in revealing the underpinning rationale for intervention modification, to provide a closer match between different aspects of individuals' experiences and the design of intervention features. This finding is supportive of the view of Resnicow *et al.* (Resnicow *et al.*, 1999) and others that it is necessary to address deep-rooted influences on health-related behaviour to bring about change. However, we would emphasize the need for a more nuanced understanding of the relationship between health-related behaviour and the determinants of such behaviour. For example, examining the impact of just one of these dimensions on health-related behaviour, as Chiang (2005) has found, modifying an intervention on the basis of 'culture' may not necessarily increase its effectiveness. Further work needs to be undertaken to identify those aspects of culture which are likely to significantly influence health-related behaviour and the extent to which specific target groups affiliate with cultural norms. Our contribution needs to be viewed in the context of the current lack of explicit reporting between the design of intervention features and a theoretical framework. This is a serious flaw in that evaluations of interventions which are not clearly underpinned by theory offer limited potential for generalization.

The five main principles for planning targeted interventions stem from a comprehensive search of all published data, supplemented by search of the grey literature and follow-up of references, quality appraisal against qualitative criteria and a systematic approach to data synthesis. This provides a sound basis for testing the relevance of the principles to other behavioural interventions with the same or other minority ethnic communities and for continued

theory-building as they are either accepted unconditionally, refined or rejected. The first principle, advocating the use of community resources to increase awareness of the interventions and facilitate recruitment, may be viewed as fundamental to adapting interventions for minority ethnic communities. Prioritizing this principle is likely to facilitate the application of other principles, including overcoming of barriers to access and participation, using appropriate communication strategies, working with cultural factors which influence behavioural change and assessing affiliation with cultural norms. It is perhaps evident that application of these principles requires in-depth knowledge of the target communities and established links with key community organizations. Sufficient resources should also be allocated for the involvement of key organizations and individuals in such interventions.

The review was limited in its focus on studies relating only to Pakistanis, Chinese and Indians. Further, information-gathering was restricted to printed material and determined by the quality of reporting of individual studies. A new study funded by the Medical Research Council is building on the current work. This will include contact with researchers involved in identified studies and will deepen understanding of the applicability of the principles offered above: <http://www.hta.ac.uk/1745>.

SUPPLEMENTARY DATA

Supplementary material relating to the studies included in the review is available at *Health Promotion International* online.

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